The opinion in support of the decision being entered today is *not* binding precedent of the Board

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Ex parte DANIEL J. SORENSEN and ROBERT LEE POPP

Appeal 2007-0283
Application 09/849,594
Technology Center 1700

Decided: March 29, 2007

Before BRADLEY R. GARRIS, CHARLES F. WARREN, and CATHERINE Q. TIMM, *Administrative Patent Judges*.

WARREN, *Administrative Patent Judge*.

DECISION ON APPEAL

Applicants appeal to the Board from the decision of the Primary Examiner finally rejecting claims 1, 3 through 10, 12 through 16, 18 through 29, 31, and 32, all of the claims in the Application, in the Office action mailed October 12, 2004. 35 U.S.C. §§ 6 and 134(a) (2002); 37 C.F.R. § 41.31(a) (September 2004).

We affirm the decision of the Primary Examiner.

Claims 1, 14, and 27 illustrate Appellants' invention of a leak proof seal bonding together at least two layers of liquid-impermeable material and a bonding process for making the same, and are representative of the claims on appeal:

1. A leak-proof seal, comprising:

at least two layers of liquid-impermeable material at least partially positioned in overlapping relationship;

a plurality of ultrasonic bond points bonding together the at least two layers of liquid-impermeable material along an edge of at least one of the layers;

wherein the bond points are aligned in at least three parallel rows with adjacent bond points in each row at a distance between about 0.001 inch and about 0.20 inch from one another, at least one of the bond points in each of the rows is equally spaced apart from at least three other bond points, and the bond points in adjacent rows are offset from one another.

14. A combination of at least one containment flap including a first liquid-impermeable material bonded to a garment including a second liquid-impermeable material, comprising:

a plurality of ultrasonic bond points joining the first liquid-impermeable material to the second liquid-impermeable material and forming a leak-proof seal between the at least one containment flap and the garment;

wherein the bond points are aligned in a pattern including at least three parallel rows, at least one of the bond points in each of the rows equally spaced apart from at least three other bond points with bond points in adjacent rows offset from one another, such that each bond points is within about 0.001 inch and about 0.20 inch of at least one other bond point.

27. A bonding process for bonding together two layers of liquid-impermeable material, comprising the steps of:

ultrasonically forming a leak-proof bond between the two layers along an edge of at least one of the layers with discrete bond points aligned in at least three parallel rows, with adjacent bond points in each row at a

distance between about 0.001 inch and about 0.20 inch from one another, at least one of the bond points in each of the rows is equally spaced apart from at least three other bond points, and the bond points in adjacent rows are offset from one another; and

displacing portions of each layer of material, wherein each of the displaced portions is in contact with at least one other displaced portion.

The Examiner relies on the evidence in these references:

Bridges	US 5,624,420	Apr. 29, 1997
Kielpikowski	EP 0 677 248 A1	Oct. 18, 1995

Appellants request review of the following ground of rejection under 35 U.S.C. § 103(a) (Br. 2-3) advanced on appeal:

claims 1, 3 through 10, 12 through 16, 18 through 29, 31, and 32 as unpatentable over Bridges in view of Kielpikowski (Answer 3-4).

Appellants argue independent claims 1, 14, and 27 as a group, claims 1 and 27 as a group, and claim 14 individually (Br. 3 and 7). Thus, we decide this appeal based on appealed claims claim 1, 14, and 27 with the dependent claims standing or falling together with the respective independent claim. 37 C.F.R. § 41.37(c)(1)(vii) (September 2004).

The Examiner contends Bridges would have disclosed ultrasonically bonding together at least partially overlapping first and second liquid-impermeable layers with at least two offset parallel rows of equally spaced ultrasonic bond points, in which the bond points can be spaced 0.01 inch apart, in constructing, inter alia, diapers (Answer 3, citing, inter alia, Fig. 1E). The Examiner finds "Bridges does not teach that at least one of the bond points in each of the rows is equally spaced apart from at least three other bond points" but discloses "the size, shape and spacing of the bonds may be varied by those of ordinary skill in the art in order to balance . . . strength" and permit tearing (*id.* 3-4). The Examiner contends

Kielpikowski teaches "a configuration wherein at least one of the bond points in each of the rows is equally spaced apart from at least three other bond points as shown in Fig. 4 as bond element 25 allows a sufficiently strong, yet soft and flexible bonded material" (*id.* 3-4). The Examiner concludes it would have been obvious "to have formed the bonds in Bridges according to the pattern shown in Fig. 4 of" Kielpikowski in the expectation "this configuration of points bonds imparts excellent strength to the bonded material, while still being soft and flexible" (*id.* 4).

Appellants contend, with respect to claims 1, 14, and 27, Bridges "discloses a 'tear line,' which . . . is a line of bond points that is designed to be torn apart" and thus, does not "suggest a bond or seal that is leak-proof" (Br. 4). Appellants contend Bridges "discloses that the *weakness* of the tear line is optimized such that the tear line is sufficiently weak to permit tearing" (*id.*). Appellants contend Bridges Fig. 1E shows "at most there are three parallel rows of bond points . . . but each row does not include at least one bond point that is equally spaced apart from at least three other bond points" and "[t]he 'zig-zag' pattern . . . [in Fig. 1E] may be conducive to creating the tear line . . . but would not likely prevent leakage through a seam bonded in this configuration" (*id.*). Appellants contend the claimed "ultrasonic bond pattern . . . creates a considerably strong bond between two or more substrates with a ***reduced likelihood of tearing*** or unbonding compared to a continuous ultrasonic bond, and with the added feature of ***preventing leakage*** through the pattern of bonds," and Bridges' suggestion of ultrasonic bonds "to form a zone of weakness" would not render obvious

"the use of a discontinuous bond pattern to create strong, leak-proof seams" as claimed (*id.*).

Appellants contend since Bridges' bond line permits tearing, it is unlikely one of ordinary skill in the art "would modify the size, shape, and/or spacing of the bonds . . . to render the tear line 'leak-proof,'" arguing the bond point are close together to permit tearing and sufficiently spaced apart to retain residual strength to prevent premature such that Bridges "teaches away from forming a leak-proof seam of closely-spaced bond points" (Br. 5). Appellants contend adding more bond points "would likely render the tear line unsatisfactory for its intended purpose" (*id.*) Appellants contend Bridges does not disclose or suggest bonding together at least two layers of liquid-impermeable material, arguing there is no suggestion the disclosed inner and outer layers that are bonded together are both liquid-impermeable, and such an inner layer would prevent liquid from reaching the absorbent assembly (*id.*).

Appellants contend Kielpikowski discloses "bond patterns for securing an elastic member within a containment flap," and Fig. 4 thereof illustrates at least three parallel rows of bond points in a pattern described as minimizing the use of bond points in the flap, at column 10, lines 1-3, wherein the bond points "may be spaced relatively far apart because it is not entirely critical to prevent the elastic member from passing outside the second pattern" of bonds 25, citing column 10, lines 20-30 (Br. 6). Appellants contend the shown "overall bond pattern does not appear to be leak-proof" and there is no suggestion the pattern is leak-proof in the reference (*id.*).

Appellants contend there is no suggestion to combine Bridges and Kielpikowski leading to an improved leak-proof seal because Bridges "discloses a 'tear line' extending from a waist opening to a leg opening in the front of the garment," Kielpikowski "discloses containment flap constructions that include an elastic member bonded between to layers," and thus, the bond patterns are in different locations and of different qualities (Br. 6-7). Appellants contend Kielpikowski's bond pattern "is designed to maintain an elastic member between two layers and is not designed to be weak or capable of tearing" (*id.* 7).

Appellants contend claims 1 and 27 require "at least two layers of liquid-impermeable material are bonded together alone an edge of at least one of the layers" (Br. 7). Appellants contend Bridges does not teach or suggest a tear line along the edge of any layer, arguing the reference "suggests that the side seams may be constructed with maximum strength if the tear line is located other than at the side seams," citing column 3, lines 61-63 (*id.*).

Appellants contend claim 14 requires "the leak proof seal bonds a containment flap to a garment," which is not taught or suggested by Bridges as "the tear lines . . . are located on a front portion of the garment" or by Kielpikowski in disclosing "bond patterns for securing an elastic member within a containment flap" (Br. 7-8).

The Examiner responds Bridges' seams are tearable but do not open during use and Appellants provide no evidence supporting the contention Bridges' bonding patterns are "likely" to leak (Answer 4). The Examiner contends Bridges uses water proof layers and the ultrasonic bonds used in

the reference do not perforate the layers, resulting in a leak-proof seam desirable in the diaper and training pants arts, in which the spacing between bond points is the same as claimed (*id.*; *see also* 5). The Examiner contends Appellants have not shown bond strength equates to leakage prevention and the claims do not recite a particular bond strength (*id.* 5). The Examiner contends the layers bonded in Bridges are liquid-impermeable as liquid-impermeable polymeric films may be employed as the layers, and Fig. 6A shows top and bottom layers 46,48 bonded to each other (*id.* 5-6).

The Examiner contends column 10, lines 20-30, of Kielpikowski cited by Appellants pertains to Fig. 3, while it is Fig. 4 which is relied on (Answer 6). The Examiner contends Kielpikowski discloses the bond pattern to be strong, soft and flexible, and one of ordinary skill would have used the bond pattern of Kielpikowski as the bond pattern in Bridges for a strong seam which can still be torn (*id.*). The Examiner contends Kielpikowski forms containment flaps which prevent leaks and thus "relates to forming leak proof seals" (*id.*).

The Examiner contends Appellants have "not qualified 'along'" in the claim language "along an edge" and thus, the claims "do not require the bond be located directly at the seam portion, but merely recite 'along' the edge" (Answer 7). The Examiner contends Bridges' Fig. 1 shows the tear lines 29 located at the edges of the films at either side of the front panel "along, i.e., in a line and adjacent to the edge" (*id.*). The Examiner contends Kielpikowski teaches bonding the containment flap to an absorbent article (*id.*).

Appellants reply "whether a seam is leak-proof is based on the ability of liquid to pass between the seam between the bonded elements" and "[l]iquid permeability is determined by the ability of a liquid to pass perpendicularly through the individual layers" (Reply Br. 2; original emphasis deleted). Appellants contend on this basis Bridges' bond points do not render the tear line leak proof and there is no suggestion in the reference the flow of liquid across the tear line is prevented, arguing "[i]n fact, once the tear line is torn, the bonds points are destroyed and any evidence of a 'seam' is certainly not leak-proof as achieved in the manner of Appellants' leak-proof seam" (*id.*; original emphasis deleted). Appellants contend the addition of more bond points to the rows of Bridges "would likely render the tear line unsatisfactory . . . [as] too strong to permit tearing" (*id.* 2-3). Appellants contend Bridges does not suggest both the inner and outer layer are liquid-impermeable as disclosing the outer layer is preferably hydrophobic does not indicate liquid-impermeability (*id.* 3).

Appellants contend Bridges differs from the claimed invention in not disclosing or suggesting the rows of bond points, bonding liquid-impermeable layers, bonding along the edge of at least one layer, or a containment flap bonded to a garment (Reply Br. 3). Appellants contend Kielpikowski discloses bond lines for securing an elastic member within a containment flap with the bond lines illustrated in Fig. 4 "described as an example of minimized use of thermal bonds in the containment flap," citing column 10, lines 1-3 (*id.*). Appellants contend Kielpikowski "suggests that the pattern of thermal bonds located between the elastic member and the proximal edge may be spaced relatively far apart because it is not entirely

critical to prevent the elastic member from passing outside the second pattern of thermal bonds," citing column 10, lines 20-30, and Figs. 3 and 4 (*id.* 3-4). Appellants contend "spacing that is far enough apart to possibly allow an elastic member to pass between the bond points . . . would certainly not result in a leak-proof seal" (*id.* 4). Appellants contend the difference in location and quality of the bond patterns in of the bond lines in Bridges and Kielpikowski establishes there is no suggestion to combine the references, and the use of Kielpikowski's bond pattern in Bridges would result in a design that is weak or incapable of tearing (*id.*).

Appellants contend "[t]he meaning of the limitation 'along an edge' is clear on its face within the context of the language of the claims" and as interpreted in view of the Specification and Fig. 1 showing bond points along an edge (Reply Br. 4). Appellants contend Bridges does not disclose the tear line along the edge of any layer and "suggests that the side seams may be constructed with maximum strength if the tear line is located other than at the side seams," citing column 3, lines 58-61, thus teaching away from positioning the tear line along the edges of the inner and outer layers (*id.* 4-5). Appellants contend Bridges does not suggest attaching containment flaps to a garment with a plurality of ultrasonic bonds and Kielpikowski discloses "bond patterns for securing an elastic member within a containment flap" without "motivation to space the bond points close enough to render the seam 'leak-proof'" (*id.* 5).

The issues in this appeal are whether the Examiner has carried the burden of establishing a prima facie case in the ground of rejection advanced on appeal.

The plain language of claim 1 specifies a leak-proof seal comprising at least bonding together at least two overlapped, liquid-impermeable layers along an edge of at least one of the layers with at least three rows of discreet ultrasonic bond points, wherein the bond points in adjacent rows are offset, adjacent bond points in each row are spaced between about 0.001 inch to 0.20 inch apart, and at least one of the bond points in each of the rows is equally spaced apart from at least three other bond points. The preambular language "leak-proof seal" considered in the context of the claimed invention as a whole, including in light of the written description in the specification, must be given weight as a claim limitation which characterizes the claimed seal in order to give meaning to the claim and properly define the invention. *See, e.g., In re Fritch*, 972 F.2d 1260, 1262, 23 USPQ2d 1780, 1781 (Fed. Cir. 1992); *In re Stencel*, 828 F.2d 751, 754-55, 4 USPQ2d 1071, 1073 (Fed. Cir. 1987). The transitional term "comprising" opens the claim to encompass leak-proof seals having additional elements including other layers, such as elastic layers, bonded together in any spatial relationship with the specified layers as well as additional types of bonds and bond patterns. *See*, e.g., *Vehicular Technologies Corp. v. Titan Wheel Int'l, Inc.*, 212 F.3d 1377, 1383, 54 USPQ2d 1841, 1845 (Fed. Cir. 2000); *In re Baxter*, 656 F.2d 679, 686-87, 210 USPQ 795, 802-03 (CCPA 1981). The specified bond type and pattern can be the sole or a contributing bonding element in forming the leak-proof seal. Claim 1 encompasses a leak proof seal as of the time the seal as claimed is constructed. *Cf. Exxon Chem. Pats., Inc. v. Lubrizol Corp.*, 64 F.3d 1553, 1556-58, 35 USPQ2d 1801, 1803-05 (Fed. Cir. 1995)

("Exxon's claims are to a composition that contains the specified ingredients at any time from the moment at which the ingredients are mixed together.").

The term "bond point" is disclosed in the Specification as "'[p]oint bond' [which] refers to a type of bond that is discontinuous, as opposed to a continuous, or solid, bond" (Specification 7:3-4). There is no limitation on the manner in which the combination of specified liquid-impermeable layers and the ultrasonic bond point pattern form the leak-proof seal. A leak-proof seal is described in the Specification as formed when "numerous point bonds . . . are spaced sufficiently close together to create a seal between the bonds" wherein "part of the substrate material being bonded is displaced outside of the actual bond point . . . blocking any passage of fluid between the bond points, or are close enough together to create a sufficiently tortuous path to block any passage of fluid between the bond points" (Specification 3:4-11, 10:11-11:2, and Fig. 2). We find no basis in the language of claim 1 or in the Specification to read this disclosure into the claims as a limitation. *See, e.g., In re Zletz*, 893 F.2d 319, 321-22, 13 USPQ2d 1320, 1322 (Fed. Cir. 1989). The term "liquid impermeable" is defined in the Specification as "a liquid . . . will not pass completely through the layer . . . under ordinary use conditions" (Specification 5:10-13). Appellants disclose that webs of polyolefin fibers and polyolefin films can be liquid impermeable materials (Specification 11:19-12:12).

The specified bond point pattern must be formed in the vicinity of the edge of at least one of the liquid-impermeable layers, the distance from the edge of the layer not specified in the claim or defined in the Specification

(*see* Specification, e.g., layers 12,14 of Figs. 1 and 2). At least one of the bond points in each of the at least three offset, parallel rows is equally spaced apart from at least three other bond points, that is, at least one bond point in each row must be spaced apart from at least one bond point in an adjacent off set row by the same distance it is spaced apart from at least one bond point in the same bond row, the spacing being in the range between about 0.001 inch to 0.20 inch (*see* Specification 9:17-20, 10:3-6, and distances X,W of Fig. 1).

The plain language of claim 27 specifies a process for bonding two layers of liquid-impermeable material, such as the materials encompassed by claim 1, comprising at least the steps of ultrasonically forming in any manner a leak-proof "bond" with discreet bond points in the same bond pattern specified in claim 1, and displacing in any manner portions of each layer of material, wherein each of the displaced portions is in contact with at least one other displaced portion. There is no limitation on the amount of material in the bond point and displaced around the bond point. The claim does not require forming the displaced portions of the material by forming ultrasonic bond points or that the displaced portions of the material is part of the "leak-proof bond."

The plain language of claim 14 specifies at least one containment flap including a first liquid-impermeable material bonded to any manner of garment that includes a second liquid-impermeable material, comprising at least the same pattern of ultrasonic bond points specified in claim 1 joining the first and second liquid-impermeable materials so as to form a leak-proof seal between the at least one containment flap and the garment. The

transitional term "comprising" and the term "including" open claim 14 to include additional layers, layer structures and other components in the garment and in the materials forming the leak-proof seal, and thus, the specified layer structure can include additional layers and other components, such as elastic components, as well as additional types of bonds and bond patterns. *See*, e.g., *Vehicular Technologies*, 212 F.3d at 1383, 54 USPQ2d at 1845; *Baxter*, 656 F.2d at 686-87, 210 USPQ at 802-03; *In re Bertsch*, 132 F.2d 1014, 1019, 56 USPQ 379, 384 (CCPA 1942) ("it is true that the word 'comprising' is usually in patent law held to be synonymous with the word 'including'"); *cf. Ex parte Davis*, 80 USPQ 448, 449 (Bd. App. 1948) ("the word 'comprising' alone being synonymous with 'including'"). The term "containment flap" is not defined in the claim or in the Specification. Thus, we determine one of ordinary skill in this art would understand this bare term to have the breadth with which it is used in the art. In this respect, Kielpikowski discloses that "[v]arious containment flaps are known for use in connection with absorbent articles such as infant diapers, [and] training pants," "are generally employed along the longitudinal sides of an absorbent article such as a diaper," "are often used in connection with elasticized leg cuffs" which have a "gasketing function," and are known in "[m]any constructions" (Kielpikowski col. 1, ll. 4-42).

We find Bridges would have disclosed to one of ordinary skill in this art disposable undergarments, including training pants and diapers, which have a non-perforated tear line through non-elastic and/or elastic containing portions (Bridges, e.g., col. 1, ll. 8-19, col. 3, ll. 1-12 and 27-39, col. 3, l. 64, to col. 4, l. 19, and col. 5, ll. 9-15). In the illustrated training pant

embodiments, the tear lines 29 can be ultrasonic bond sites formed in chassis 14 any place between absorbent assembly 22 and seam 10 formed in longitudinal side regions 88, and can be in front portion 56 or rear portion 58 (*id.*, e.g., col. 5, l. 24, to col. 7, l. 31, col. 11, l. 40, to col. 12, l. 47, and Figs. 1, 2, 3, 6, 6A, and 7). The longitudinal side regions 88 can be a separate element attached to ear flap region 72 as a containment flap in the manner known in the prior art as acknowledged by Kielpikowski (*see above* p. 13), or by portions of outer layer 48 and inner layer 46 that extend beyond ear flap 72 (*id.*, e.g., col. 11, ll. 48-57, and Fig. 3). The tear lines 29 extend continuously between a leg opening, such as leg band 32, and a waist opening, such as waist band 34, and thus in non-elastic areas of longitudinal side regions 88 in which outer layer 48 overlaps inner layer 46. In this respect, the tear lines 29 can also be in elastic areas of longitudinal side regions 88 containing waistband band member 76 in continuous waist band 34, in areas with elastic strands 105 containing areas of central region 68, and ear flap region 72 in which elasticized ear flaps 30 have elastic ear flap members 90, all of which elastic structures are between inner layer 46 and overlapping outer layer 48. *Id.*, e.g., col. 7, l. 65, to col. 8, l. 28, col. 8, l. 58, to col. 12, l. 47, col. 15, l. 32, to col. 16, l. 8, and Figs. 2-8. The inner layer 46 and the outer layer 48 can be the same material and can be polyolefin films and non-woven fabrics, such as hydrophobic materials which can be a nonwoven web of polyolefin fibers (*id.*, e.g., col. 8, ll. 29-56).

We find Bridges discloses a "tear line comprising individual bond sites sized, shaped, spaced and arranged such that the tear line has sufficient

strength during regular use to prevent premature separation of the pants from the wearer" (Bridges, e.g., col. 3, ll. 1-12, and col. 4, ll. 2-6). The strength of tear line 29 is such that it will "open when an adult grasps on opposing sides of the tear line at the waist with two hands and pulls apart," with this procedure performed for each tear line (*id.*, e.g., col. 3, ll. 50-53, and col. 6, ll. 13-17, and Fig. 1). The bond sites must be spaced sufficiently close to allow tearing but far enough apart to provide sufficient residual strength, with the shape, size, spacing and arrangement of the bonds determined by one of ordinary skill in the art depending on the material(s) employed (*id.*, e.g., col. 4, ll. 2-6, col. 6, ll. 25-41, col. 7, ll. 36-47, and Figs. 1 and 2). The bond sites can be created by ultrasonic bonding in which at least 50% of the material at the bond site "is displaced to a thickened outer edge" 7 which "is thicker than the layers of adjacent, unbonded material 46, 48" as illustrated in circular bonds in Fig. 1C (*id.*, e.g., col. 4, ll. 14-16, col. 7, ll. 1-22, and Figs. 1C-D). The bond site pattern can be a zigzag pattern of circular bond sites in which "[a]djacent bond sites are spaced 0.01[inch] from one another edge-to-edge for ensuring sufficient girth strength" (*id.*, e.g., col. 7, ll. 50-55, and Figs. 1E-F).

We find Kielpikowski would have disclosed to one of ordinary skill in this art the embodiment of Fig. 4 which is containment flap 10 formed by folding a single piece of material to form distal edge 14 and overlapping first and second layers 16,18, wherein elastic member 20 is located between said layers (Kielpikowski col. 5, ll. 33-42). The first and second layers 16, 18 are bonded together along distal edge 14 by a pattern of thermal bonds 30 which also bonds elastic member 20 to said layers (*id.* col. 5,

ll. 42-45, and col. 9, ll. 48-52). Another pattern of thermal bonds 25 can further bond overlapping first and second layers 16,18 along proximal edge 12 which does not contain an elastic member, and is illustrated as including four offset parallel rows of circles in which at least one of the bond points in each row is equally spaced apart from at least three other bond points (*id.*, col. 5, ll. 45-47, and Fig. 4). The pattern of thermal bonds 25 can be formed by, inter alia, ultrasonic bonding and can be formed in a wide variety of shapes such as, inter alia, circles and dots (*id.*, e.g., col. 10, ll. 4-11 and 34-37, col. 12, l. 56 to col. 15, l. 4). "When it is desirable to minimize the use of thermal bonds in the containment flap, it is possible to form the flap generally illustrated in Fig. 4" (*id.*, col. 10, ll. 1-3). The bond patterns of Fig. 4 are used instead of adhesives to bond layers 16,18 to provide flexibility and must be strong enough to maintain integrity of containment flap 10 during use in absorbent garments, including diapers and training pants, to which it is attached along proximal edge 12 (id., e.g., col. 1, ll. 54-57, col. 2, ll. 5-7, col. 5, ll. 48-55, col. 10, ll. 1-3 and 39-46, col. 11, ll. 17-30, and Figs. 5 and 6; *see also above* p. 13). Containment flap 10 can be made from polyolefin nonwoven webs and films which can be liquid impervious materials (*id.*, e.g., col. 6, ll. 9-19, 28-33 and 51-55).

We find one of ordinary skill in this art would consider the disclose at column 10, lines 18-30, of Kielpikowski directed to second pattern of thermal bonds 26 of the containment flap 10 embodiment illustrated in Fig. 3 and not to all of the bond patterns of the containment flap 10 embodiment illustrated in Fig. 4 which differ from the bond patterns of the embodiment illustrated in Fig. 3 (Kielpikowski col. 5, ll. 16-32, and col. 15, ll. 11-16).

We are of the opinion that the facts found by the Examiner in Bridges and in Kielpikowski support the prima facie case of obviousness stated in the Answer. Accordingly, we again consider the record as a whole in light of Appellants' arguments in the Brief and Reply Brief. *See, e.g., In re Oetiker*, 977 F.2d 1443, 1445, 24 USPQ2d 1443, 1444 (Fed. Cir. 1992); *In re Piasecki*, 745 F.2d 1468, 1472, 223 USPQ 785, 788 (Fed. Cir. 1984).

We agree with the Examiner that Appellants have not supported their contentions that the bond pattern illustrated in Bridges Fig. 1 results in a leaking seam. Unsupported contentions of counsel are entitled to little, if any, weight. *See, e.g., In re De Blauwe*, 736 F.2d 699, 705, 222 USPQ 191, 196 (Fed. Cir. 1984); *In re Payne*, 606 F.2d 303, 315, 203 USPQ 245, 256 (CCPA 1979); *In re Lindner*, 457 F.2d 506, 508, 173 USPQ 356, 358 (CCPA 1972). Indeed, as the Examiner finds, Bridges discloses overlapping inner and outer layers 46,48 can be olefinic materials which are disclosed by Kielpikowski to be liquid impermeable. As the Examiner further finds, the spacing between the bond points in Bridges Fig. 1E falls within the claimed range in claim 1. Further, the description in Bridges of the displacement of material upon the formation of a bond point for tear line 29 by ultrasonic bonding meets the displacement requirement in the last clause of claim 27, which displaced material at the spacing disclosed in Bridges reasonably appears to form a leak-proof seal as it is described in the Specification. Thus, evidence in the record reasonably appears to establish that the bond pattern of Bridges Fig. 1E forms a leak proof seal even though the reference is silent in this respect. *See, e.g., In re Best*, 562 F.2d 1252, 1255-56, 195 USPQ 430, 433-34 (CCPA 1977); *In re Skoner*, 517 F.2d 947,

950-51, 186 USPQ 80, 82-83 (CCPA 1975) ("Appellants have chosen to describe their invention in terms of certain physical characteristics . . . . Merely choosing to describe their invention in this manner does not render patentable their method which is clearly obvious in view of [the reference]." (citation omitted)). The tear line containing article taught by Bridges is applicable to the claimed invention even though the article is destroyed during use.

We further agree with the Examiner that one of ordinary skill in this art would have found in Bridges the teaching that such person can determine other patterns of ultrasonically formed bonds which satisfy the requirements of strength and tearing set forth in the reference. Contrary to Appellants' contentions, we determine this person would have combined Bridges and Kielpikowski on this basis. Bridges discloses that in a diaper, tear lines 29 can extend along the edge of longitudinal side regions 88 where seam 10 is formed. Longitudinal side region 88 can be formed from overlapping inner and outer layers 46,48 of liquid impermeable-material or can be a longitudinal containment flap attached to ear flap 72, without an elastic member present between the inner and outer layers of either structure. The ultrasonic bond points can be in the pattern illustrated in Fig. 1E in which the bond points are circular and spaced 0.01 inch from one another in three offset parallel rows. Kielpikowski discloses a containment flap having ultrasonic bond points 25 along the edge of overlapping first and second layers 16,18 of liquid-impermeable material which do not have an elastic member therebetween. The pattern of bond points 25 is illustrated in Fig. 4 as circular bond points in four offset parallel rows in which at least

one of the bond points in each row is equally spaced apart from at least three other bond points. Kielpikowski teaches that the bonding patterns of the embodiment illustrated in Fig. 4 can be used where "it is desired to minimize the use of thermal bonds." One of ordinary skill in the art would have formed the circular ultrasonic bond points according to the pattern in Fig. 4 of Kielpikowski by the method of Bridges which results in displacement of material around the bond site, reasonably appearing on this record to form a leak proof seal between the inner and outer layers of liquid-impermeable material.

Thus, on this record, we determine one of ordinary skill in this art would have found in the teachings of Bridges and Kielpikowski the motivation to combine the same and thence to use the bond point pattern illustrated in Fig. 4 of Kielpikowski in forming tear line 29 along the edge of overlapping inner and outer layers 46,48 in the non-elastic areas of longitudinal side regions 88 in the reasonable expectation of obtaining a tear line 29 of suitable strength to maintain the integrity of the diaper or similar article before the article is torn apart along that line in use.

Therefore, we are of the opinion that one of ordinary skill in this art routinely following the combined teachings of Bridges and Kielpikowski as applied by the Examiner would have reasonably arrived at the claimed leak-proof seal and method of making the same encompassed by claims 1, 14, and 27 without recourse to Appellants' Specification. *See, e.g., In re Kahn*, 441 F.3d 977, 985-88, 78 USPQ2d 1329, 1334-37 (Fed. Cir. 2006); *In re Keller*, 642 F.2d 413, 425, 208 USPQ 871, 881 (CCPA 1981)("The test for obviousness is not whether . . . the claimed invention must be expressly

suggested in any one or all of the references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art.").

Accordingly, based on our consideration of the totality of the record before us, we have weighed the evidence of obviousness found in the combined teachings of Bridges and in Kielpikowski with Appellants' countervailing evidence of and argument for nonobviousness and conclude that the claimed invention encompassed by appealed claims 1, 3 through 10, 12 through 16, 18 through 29, 31, and 32 would have been obvious as a matter of law under 35 U.S.C. § 103(a).

The Primary Examiner's decision is affirmed.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(1)(iv).

AFFIRMED

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Pauley Petersen & Erickson
2800 West Higgins Road
Hoffman Estates, IL 60169